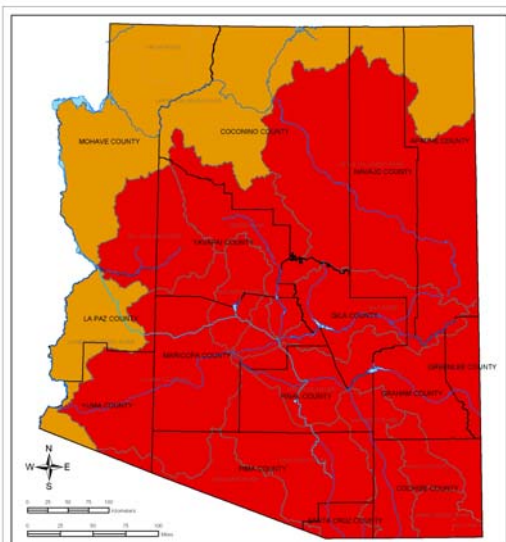


# April Drought Monitor Report



Watershed Drought Level  
Normal  
Abnormally Dry  
Drought - Moderate  
Drought - Severe  
Drought - Extreme  
Counties  
Lakes  
Rivers  
CAP Aqueduct  
Merged Watershed\*

April 2006 Short Term Drought Status  
Data Through March 31st, 2006  
Arizona Drought Preparedness Plan  
Monitoring Technical Committee

\* Watershed merged due to limited data.

## Produced by the Monitoring Technical Committee

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U of A Cooperative Extension

Drew Ellis, State Climatologist  
Arizona State University

Charlie Ester, Salt River Project

Gregg Garfin, University of  
Arizona - CLIMAS

Tony Haffer, National Weather  
Service

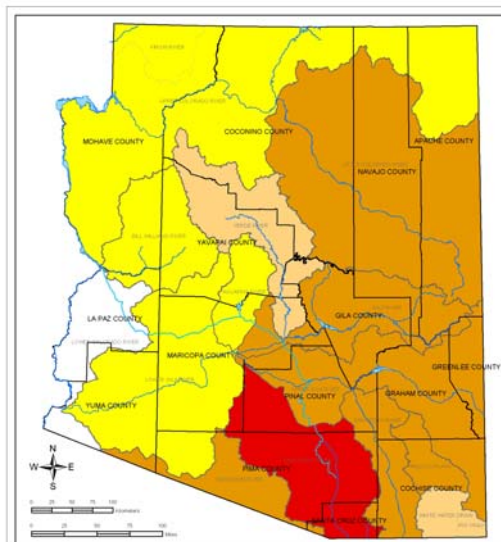
Larry Martinez, Natural Resources  
Conservation Service

Ron Ridgway, Arizona Division of  
Emergency Management

Chris Smith, U.S. Geological Survey

Coordinator: Susan Craig, Arizona  
Department of Water Resources

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Arizona Department of Water Re-  
sources



Watershed Drought Level  
Normal  
Abnormally Dry  
Drought - Moderate  
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Counties  
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CAP Aqueduct  
Merged Watershed\*

April 2006 Long Term Drought Status  
Data Through March 31st, 2006  
Arizona Drought Preparedness Plan  
Monitoring Technical Committee

\* Watershed merged due to limited data.

Note that drought maps are now delineated by watershed rather than climate division. The majority of Arizona remains under extreme short-term drought conditions, with the west and north regions at severe status.

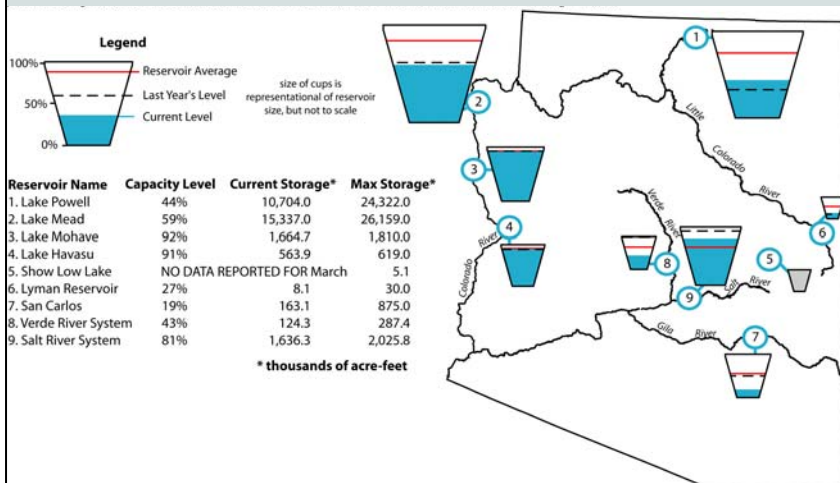
## Drought Decision Triggers

[www.azwater.gov](http://www.azwater.gov)

Arizona's long-term drought status is severe throughout much of the eastern half of the state and abnormally dry across much of the western half. Conditions in the Santa Cruz watershed have reached extreme drought status.

## Reservoir Storage Assessment

Arizona reservoir levels for March 2006 as a percent of capacity. The map depicts the average level and last year's storage for each reservoir, while the table also lists current and maximum storage levels.



Arizona's reservoir storage held fairly constant over the last month, with most lakes declining by less than one percent of capacity. The San Carlos reservoir on the Gila River declined by one percent of capacity, whereas Lyman Lake remained steady. Total storage on the Colorado River declined by about 0.4 percent of capacity. Total storage on the Colorado River remains at below-average levels due to long-term precipitation deficits in the Upper Colorado River Basin, even though Lake Powell has risen by 11 percent of capacity relative to last year. Like last month, storage on the three largest reservoirs within the state has declined since this time last year as the result of persistent drought conditions since the wet winter and spring of 2004-2005. The Salt River system has declined by 12 percent of capacity since a year ago, but remains well above-average. In contrast, the Verde River system and the San Carlos reservoir now hold less than half the amount of water they did a year ago, having declined by 56 percent and 31 percent of capacity, respectively. Note that data for Show Low Lake are no longer being reported.

# Climate Assessment

## Precipitation

The recent warm and extremely dry conditions abated in March across the entire state of Arizona, as the month was cooler and wetter than average statewide. However, the Palmer Drought Severity Index still indicates moist conditions only along the western edge of the state (CDs 1 and 5); elsewhere it signals very dry conditions.

### Precipitation totals

#### Previous 3- and 6-month periods -

Very low, with much of the state characterized by amounts indicative of "severe" to "extreme" short-term drought over the past 3 to 6 months.

#### Previous 12 months -

Dryness is characteristic of "extreme" or "severe" drought across five of the seven Arizona climate divisions.

#### Previous 2 years -

Very little evidence of drought within the state; drought is evident only across southeastern Arizona ("moderate") during this period.

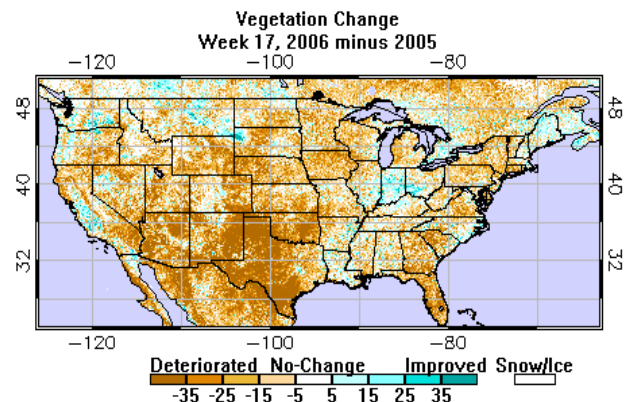
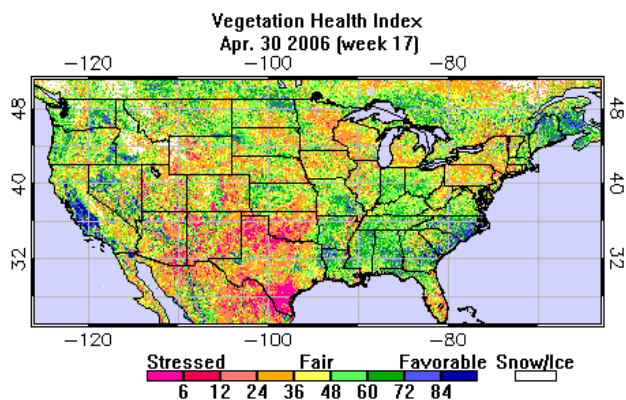
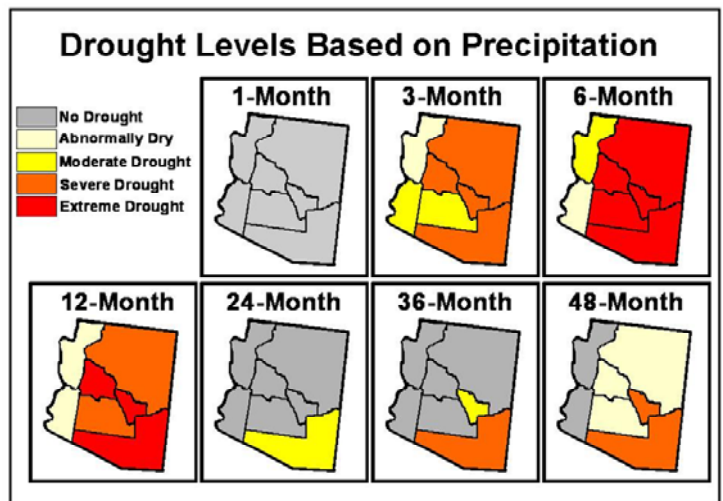
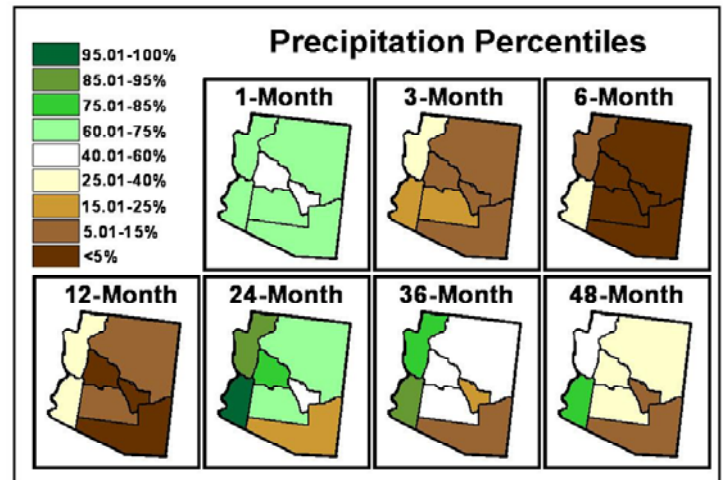
#### Previous 3 years -

Precipitation totals are above average for five of the seven climate divisions in Arizona; however, across southeastern Arizona the 3-year total is suggestive of "severe" drought. "Moderate" drought conditions are indicated across east-central Arizona.

#### Previous 4 years -

"Severe" drought conditions are indicated in the east-central and southeastern regions.

For full assessment, see *State Climate Update for Arizona* – [www.public.asu.edu/~dellis/update.html](http://www.public.asu.edu/~dellis/update.html).



## Vegetation Status

This month, we introduce two new vegetation status products from the NOAA National Environmental Satellite, Data and Information Service (NESDIS). These satellite-derived images were taken on April 30, 2006. The top figure indicates vegetation health for the United States. The predominantly fair and favorable conditions across the state reflect spring green-up. Significant portions of northeastern and, especially, southeastern Arizona show extremely stressed vegetation, which is to be expected after the record or near-record dryness in Arizona this winter. The bottom figure shows the change from last year in vegetation status; note the significant deterioration of vegetation health since the relatively wet winter and spring of 2004-2005.

[www.orbit.nesdis.noaa.gov/smcd/emb/vci/usavhcd.html](http://www.orbit.nesdis.noaa.gov/smcd/emb/vci/usavhcd.html)



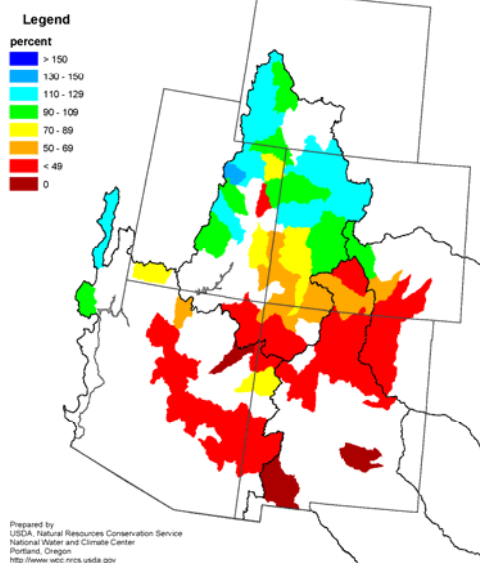
# Streamflow/Runoff

## Mountain Precipitation

Data from high elevation SNOTEL sites show that precipitation for March was 132 percent of average over the Salt River basin, 111 percent of average over the Verde River basin, and 99 percent of average over the San Francisco-Upper Gila River basin. The Little Colorado River basin received 131 percent of average precipitation in March.

Very little snow cover remains at any of the snow measurement stations in Arizona. As a result, extremely low snowmelt runoff is forecast for the Salt, Verde, San Francisco, Gila, and Little Colorado River basins through springtime.

Colorado & Rio Grande Mountain Snowpack as of April 1, 2006



Watershed	Percent (%) of 30-Yr. Average	
	Snowpack as of April 1	Precipitation Oct. 1-Mar.
Salt River Basin	18%	40%
Verde River Basin	18%	35%
Little Colorado River Basin	18%	38%
San Francisco-Upper Gila River Basin	28%	39%
Central Mogollon Rim	17%	35%
Grand Canyon	50%	47%
Arizona Statewide	28%	--
Upper Colorado River Basin	102%	102%

Snowpack Amounts and Water Year Precipitation (Source USDA-NRCS)

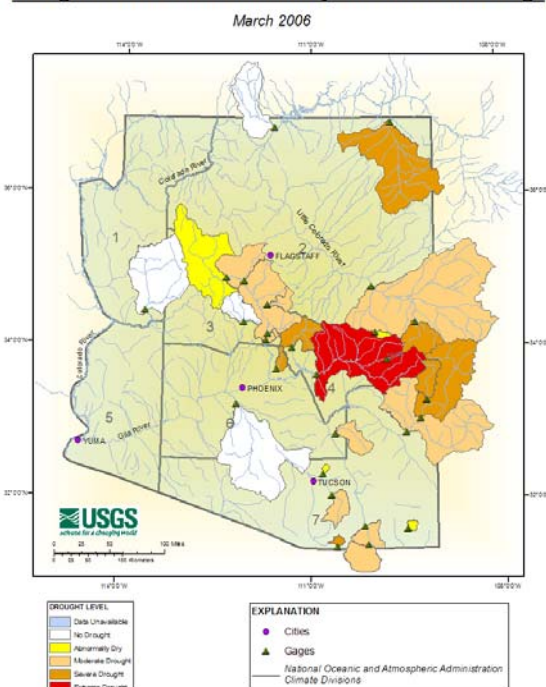
## Runoff

Waterbody	March Runoff in Acre Feet	% of Median
Salt River near Roosevelt	12,530	10%
Tonto Creek	1,235	6%
Verde River at Horseshoe Dam	14,560	20%
Combined info to Salt River Project reservoir system	28,325	13%
Little Colorado River above Lyman Lake	235	14%
Gila River to San Carlos reservoir	2,390	9%
Colorado River inflow to Lake Powell	482,000	73% of the 30-yr. avg.

(Data provided by USDA-NRCS)

For more information, visit [az.water.usgs.gov/droughtmaps/droughtmaps.htm](http://az.water.usgs.gov/droughtmaps/droughtmaps.htm).

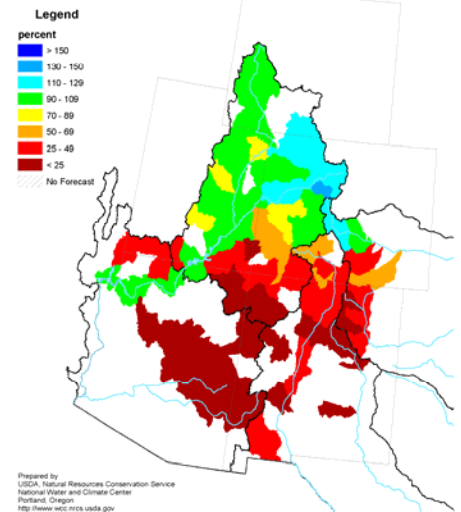
Drought Levels Based on Monthly Streamflow Discharge



# Streamflow Forecasts

Waterbody	Forecasted Runoff (March – May unless noted) in Acre Feet	% of Median
Salt River near Roosevelt	25,000	9%
Tonto Creek	1,000	4%
Verde River at Horseshoe Dam	30,000	21%
San Francisco River at Clifton	7,200	17%
Gila River near Soloman	13,000	12%
San Carlos reservoir inflow	5,600	9%
Little Colorado River above Lyman Lake	March-June - 510	8%
Little Colorado River at Woodruff	110	5%
Colorado River inflow to Lake Powell	Apr-July – 7.2 million	91% of 30-yr. avg.
Virgin River at Littlefield	Apr-July – 16,000	22% of 30-yr. avg.

Colorado River  
Spring and Summer Streamflow Forecasts  
as of March 1, 2006



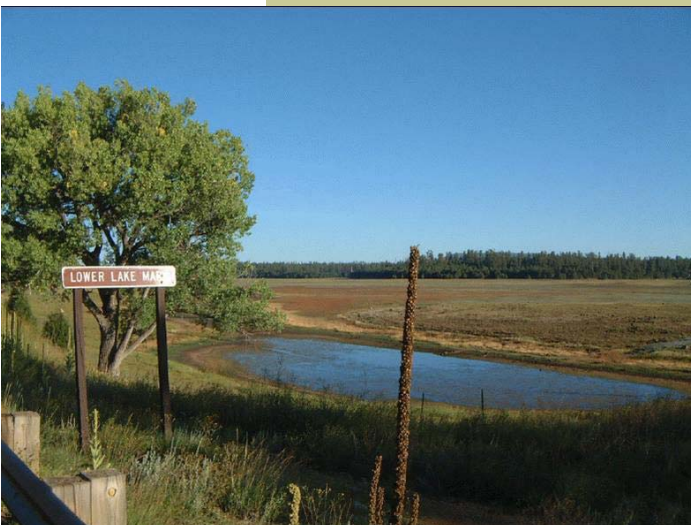
(Data provided by USDA-NRCS)

## DroughtWise

Drought conditions tend to draw attention to the importance of water conservation. However, saving water is something we should always practice to help maintain an abundant water supply. Water conservation is everyone's responsibility.

### Tip of the Month

**Wash only full loads of laundry. Smaller loads waste more water.**



Photos courtesy of Kelly Redmond, Western Regional Climate Center

# Weather Outlook

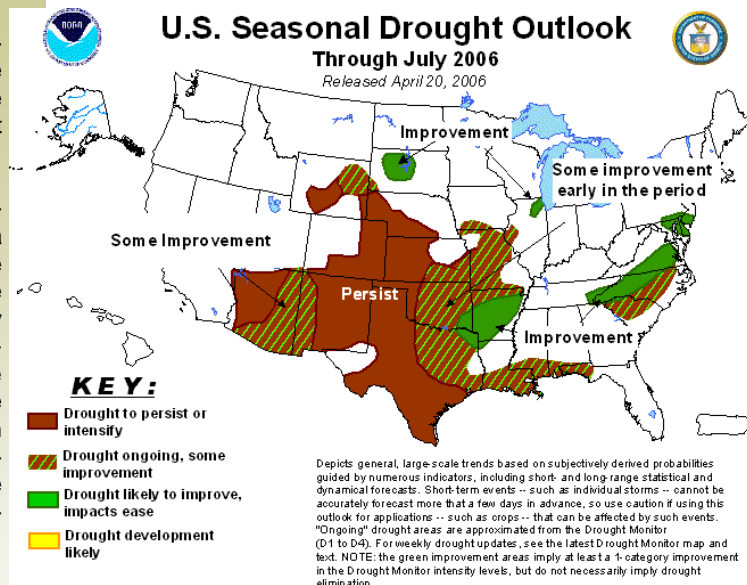
## Climate & Drought Outlooks

The NOAA Climate Prediction Center (CPC) precipitation outlook for Arizona during May indicates equal chances for above average, average, and below average precipitation across the state. The CPC temperature outlook for May indicates modest confidence for above average temperatures statewide.

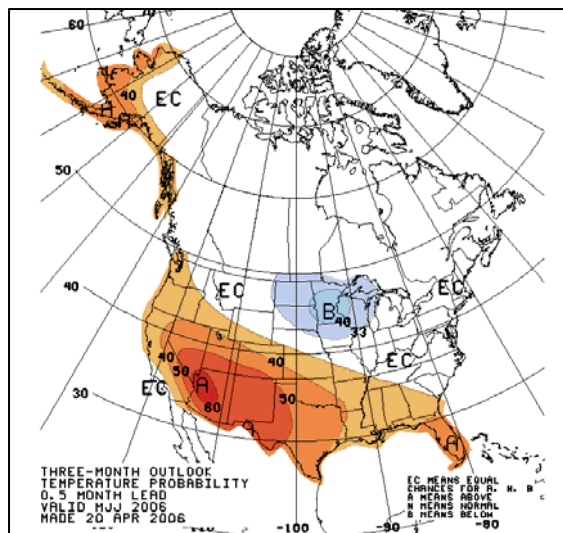
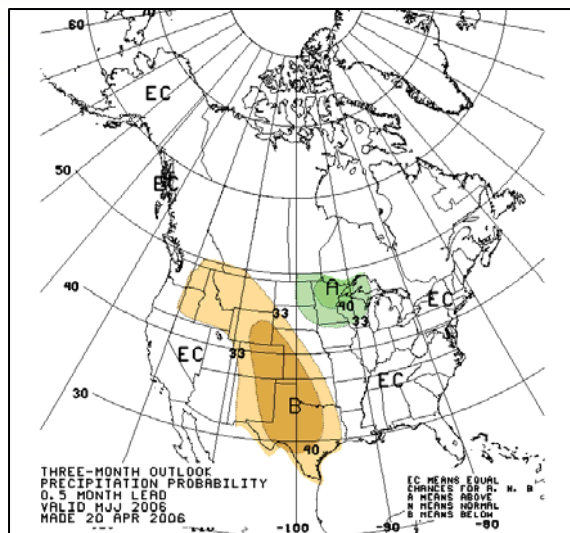
The CPC Seasonal Drought Outlook (right) indicates areas experiencing drought conditions in the northwest half of Arizona will see these conditions persist through July (at least), while some improvement in the southeast half of the state is possible by July 2006. The CPC outlook for the 90-day period, May through July 2006, indicates a high confidence level that temperatures will be above average and equal chances for above average, average, and below average precipitation across the state (the outlook in March indicated some confidence that precipitation would be above average across much of the state).

Also see *Southwest Climate Outlook - March 2006*  
[www.ispe.arizona.edu/climas/forecasts/swoutlook.html](http://www.ispe.arizona.edu/climas/forecasts/swoutlook.html).

For additional weather information from the Office of the State Climatologist for Arizona -  
[www.public.asu.edu/~dellis/azscweather.html](http://www.public.asu.edu/~dellis/azscweather.html).



## Precipitation & Temperature Outlooks



NOAA's CPC Outlooks are 3-category forecasts. As a starting point, the 1971–2000 climate record is divided into 3 categories, each with a 33.3 percent chance of occurring (i.e., equal chances, EC). The forecast indicates the likelihood of one of the extremes—above-average (A) or below-average (B)—with a corresponding adjustment to the other extreme category; the “average” category is preserved at 33.3 likelihood, unless the forecast is very strong. Thus, using the NOAA-CPC temperature (precipitation) outlooks, areas with light brown (green) shading display a 33.3–39.9 percent chance of above-average, a 33.3 percent chance of average, and a 26.7–33.3 percent chance of below-average temperature (precipitation). A shade darker indicates a higher than 40.0 percent chance of above-average, a 33.3 percent chance of average, and a further reduced chance of below-average temperature, and so on. Equal Chances (EC) indicates areas with an equal likelihood of above-average, average, or below-average conditions; it is used by forecasters when the forecast tools do not indicate a strong “signal” conditions during a given period will be in any one of the three categories.

This report was based on data and information through March 31, 2006, with the exception of Vegetation Status, which reflects April conditions.